

### **REMARKS**

Claims 1-5 are currently pending. Applicants respectfully request reconsideration of the above-captioned application.

The Office Action of September 9, 2004 includes an objection to the drawings, suggesting that the recitation in originally presented claim 2 of the resistor layer being formed both over and beneath the cathode must be shown in the drawings. It is believed that the drawing requirements are not so stringent; however, Figure 4 has been relabeled Figure 4A and a new Figure 4B is presented which illustrates the resistor layer 130 both above and below the cathode 120. Support for this new figure, and the corresponding change to the text at pages 4 and 5 of the present specification, is found in the original presentation of claim 2. In light of these changes, Applicants respectfully request reconsideration and withdrawal of the drawings objection.

The Office Action also objects to the specification, noting a minor error in a reference number. The specification has been reviewed and the appropriate change, as well as other changes, have been made.

The Office Action also includes an objection to claim 2, noting a minor grammatical error. Claim 2 has been amended to overcome this objection. Further changes have been made to claim 1 to clarify the scope thereof.

The Office Action includes a rejection of claims 1-3 under 35 U.S.C. §103 as allegedly being unpatentable over the Choo patent (U.S. Patent No. 5,910,704) in view of the Nakamoto patent (U.S. Patent No. 6,079,138) or the Blanchet-Fincher et al patent (U.S. Patent No. 6,020,677); and a rejection of claims 4 and 5 under 35

**AMENDMENTS TO THE DRAWINGS:**

Please add Figure 4B, which is added pursuant to the Examiner's suggestion.

U.S.C. §103 as allegedly being unpatentable over the above-mentioned references, and in further view of the Jones et al patent (U.S. Patent No. 5,663,608). These rejections are respectfully traversed.

In describing the Choo patent, the Office suggests that the second gate electrode 14b of the Choo patent meets the recitation of the focus gate electrode of claim 1. Applicants respectfully disagree. The second gate electrode 14b of the Choo patent is clearly disclosed as being a gate electrode. Multiple gate electrodes are said to maximize the efficiency of the field emission display by increasing current density in the Choo patent. Very clearly, each gate electrode 14a, 14b and 14c are designed to be just that-gate electrodes-and not focusing electrodes. This is additionally evident insofar as they are adjacent and coplanar with the micro-tips 15, which is not a suitable location for an electrode that is to focus the electrons. Hence, applicants respectfully submit that the Choo patent does not describe the present invention particularly with respect to both the focus gate insulation layer and the focus gate electrode recitations, when taken in combination with the other features of claim 1.

New claim 6 is also added to bring out yet another distinction, i.e., that multiple gates can correspond to a single opening in a focus gate insulating layer, such as shown in Figure 4A, for instance. This aspect is also not shown in the Choo patent, nor would it be insofar as the Choo patent discloses multiple gate electrodes, rather than focusing electrodes.

For at least the foregoing reason, the rejections based on the Choo patent should be withdrawn.

Additionally, claim 1 recites micro-tips having nano-sized surface features formed on the cathode. For this aspect of claim 1, the Office relies on the Nakamoto patent and alternatively the Blanchet-Fincher et al patent. The Nakamoto patent, however, discloses the use of a plurality of carbon nanotubes 115 adhered to a conductive projection 118, for instance. The application of carbon nanotubes on a projection is not the equivalent to micro-tips having nanosized surface features. This term of "nanosized surface features" is well described in the specification as the result of etching the micro-tip. Stated differently, it is clear from the definition of "nano-sized surface features" is the surface features of the micro-tip, and not some additional application of a different material, which constitutes a nanosized surface feature. A definition of the nanosized surface features was added to the claim to avoid any confusion, but such change does not result in a substantive amendment to the scope of the claims as properly interpreted in light of the specification.

With respect to the Blanchet-Fincher et al patent, it is noted that the disclosure relates to carbon cones upon which carbon whiskers are formed as field emitters. However, it is clear from the disclosure at various locations that the surface features are formed on carbon substrates, rather than micro-tips. Here it is not clear that the ion bombardment technique would be useful with micro-tips, but more importantly, its use with micro-tips is neither suggested nor taught in the Blanchet-Fincher et al patent. Instead, the carbon cones and carbon whiskers are formed on a film's surface or substrate.

In light of the foregoing, applicants respectfully submit that claim 1 is not met by the Choo, Nakamoto or Blanchet-Fincher et al patents, whether taken alone or in combination.

The Office Action also applies the Jones et al patent for the teaching of a resistor layer. Even if it were obvious to modify the Choo micro-tips to include a resistor layer, the hypothetical result would still not meet the recitations of the pending claims, for the reasons given above. Also, the combination of recitations of claim 5 were not immediately apparent as being disclosed in the Jones et al patent.

In light of the foregoing, applicants respectfully request reconsideration and withdrawal of the rejections based on prior art.

Finally, the Office Action includes a non-statutory double patenting rejection suggesting that the present claims are patentable over the claims of Application 09/754,273 in view of the Yamaguchi et al patent (U.S. Patent No. 5,955,850) and the Nakamoto patent. Rather than address the merits of the rejection, applicants have elected to file a terminal disclaimer insofar as the filing of a terminal disclaimer does not represent acquiescence to the position taken in the Office Action and is of little consequence to the patent term or common ownership of the applications.


Having addressed each of the issues, applicants respectfully request reconsideration and allowance of the above-captioned application. Should any other issues exist, the Examiner is invited to contact the undersigned at the number listed below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: January 10, 2005

By:

  
\_\_\_\_\_  
Charles F. Wieland III  
Registration No. 33,096

Attachments: Annotated Sheet Showing Change  
Replacement Sheet  
New Sheet

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620



FIG. 3

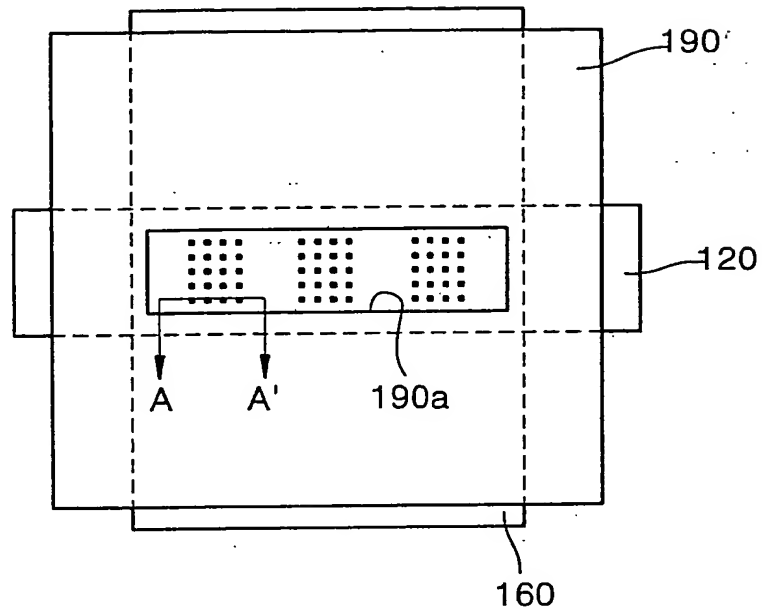


FIG. 4A

